

## ***Mathematics Vision Project (MVP)***

### ***FAQ***

***4/2/2019***

#### **Why and how was MVP chosen for high school mathematics in WCPSS?**

The economic collapse in 2008-2009 and the multi-year recession that followed resulted in significant and long-term reductions in personnel and instructional resource allocations to districts, including textbook funding. Consequently, with no funds available for new textbook and/or curriculum adoptions, individual schools and classroom teachers were essentially left on their own to develop, procure, and implement whatever instructional resources that they could acquire.

Not surprisingly, when WCPSS conducted a comprehensive audit of all K-12 classroom curriculum resources in 2016, wide variations in resources and practices were observed - both across and even within schools - and many were not adequately aligned with the applicable state content standards. Based in large part on these findings, WCPSS began a comprehensive [procurement process](#) in the fall of 2016. The district received seven responses to the RFP. Of the seven responses, two resources met the standards of the Instructional Materials Evaluation Tool (IMET) that was completed by Central Services curriculum specialists. The IMET tool looked primarily for the alignment to standards and the shifts (focus, coherence and rigor).

The two resources that met the criteria of the IMET tool were available for review by teachers and community members at [four regional sessions](#). The two resources were also field-tested by WCPSS teachers. Central Services staff participated in a deep dive into each set of materials conducted by the vendor/publisher as well. Data from all of these stakeholders was analyzed and a final [recommendation for the adoption of MVP](#) was made.

Prior to implementation in the 2017-2018 school year, district staff analyzed the [EdReports](#) review (published on 6/21/17) of MVP.

- Of the specific indicators with ratings in the report:
  - 20 had a score of earning 100% of the available points
  - 10 had a score of earning 50% of the available points (9 of those had only 2 points that were available to earn)
  - Of the 3 indicators that earned 0%:
    - One was about containing examples of more advanced math so teachers can “improve their own knowledge of the subject, as necessary”.
    - One was about relating the standards to the course as a whole.

- One was about ELL and Special Populations support (which was actually included as part of our own feedback shared in the Board update last November).
- Overall ratings were:
  - Focus and Coherence - 15/18, Meets Expectations
  - Rigor and Mathematical Practices - 15/16, Meets Expectations
  - Usability - 23/36, Partially Meets Expectations
  - Alignment - Meets expectations

Based on feedback from Central Services staff and teachers, MVP facilitators have already addressed some of the areas that were indicated as “partially met” or “not met”. In particular, MVP facilitators incorporated strategies for supporting ELL and Special Education students into their professional development.

### **What is the MVP instructional model?**

The MVP curriculum is based on the Comprehensive Mathematics Instruction (CMI) Framework which involves the Learning and Teaching Cycles. The CMI Framework supports the research-based [Effective Mathematics Teaching Practices](#) outlined by the National Council of Teachers of Mathematics in their publication “Principles to Actions.” During the Learning Cycle, students are exposed to three types of tasks: Develop Understanding Tasks, Solidify Understanding Tasks, and Practice Understanding Tasks.

- **Develop Understanding Tasks** are used to surface student thinking about a math concept. These tasks are often based in a real life situation.
- **Solidify Understanding Tasks** are used to examine student thinking around the math concept and to extend or add to that thinking to begin deepening understanding of the concept.
- By the time students reach **Practice Understanding Tasks**, they are working on building fluency with procedures and algorithms.

The Learning Cycle takes several days to complete, but the Teaching Cycle occurs on a daily basis. Teachers **Launch** the task, students are given time to **Explore** and work on solving the task, and then the teacher facilitates **Discussion** of the task.

Launch	Explore	Discuss
<ul style="list-style-type: none"> <li>•The teacher begins with a question to <b>focus</b> learning.</li> <li>•<b>Explains context</b> of the task so students understand the problem situation.</li> <li>•<b>Clarifies</b> what students are <b>expected to do</b> in the task.</li> <li>•Makes the task accessible <b>without giving away</b> the math of the task.</li> </ul>	<ul style="list-style-type: none"> <li>•Students work independently before sharing with their group.</li> <li>•Teacher <b>monitors</b> students work, <b>asking questions</b> to understand, support, and push their thinking.</li> <li>•Teacher encourages students to <b>share</b> ideas.</li> <li>•Teacher <b>selects</b> students to share during the class discussion.</li> </ul>	<ul style="list-style-type: none"> <li>•The teacher <b>sequences student sharing</b> to focus on math goals of the lesson.</li> <li>•Encourages students to respond to ideas of peers.</li> <li>•Asks questions to <b>connect ideas</b>.</li> <li>•Provides students with any new vocabulary or notation.</li> <li>•<b>Summarizes</b> the lesson to ensure that important ideas are captured.</li> </ul>

### Timing of Typical Lesson

<u>Block Schedule (90 min per day)</u>	<u>Year-Long Schedule (50 min per day)</u>
<ul style="list-style-type: none"> <li>• 10 min: Warm-Up</li> <li>• 10 min: Homework Review</li> <li>• 10 min: Launch</li> <li>• 20 min: Explore</li> <li>• 30 min: Discuss</li> <li>• 10 min: Wrap-Up/Exit Ticket</li> </ul>	<p>Day 1:</p> <ul style="list-style-type: none"> <li>• 10 min: Warm-Up</li> <li>• 10 min: Homework Review</li> <li>• 10 min: Launch</li> <li>• 20 min: Explore</li> </ul> <p>Day 2:</p> <ul style="list-style-type: none"> <li>• 10 min: Warm-Up/Homework</li> <li>• 30 min: Discuss</li> <li>• 10 min: Wrap-Up/Exit Ticket</li> </ul>

### **What is the role of direct instruction in an MVP classroom?**

Direct instruction has an important role in the MVP curriculum. It typically occurs during the discuss phase, after students have engaged with a the task and have applied their own thinking to the situation. As part of the whole class discussion, the teacher asks questions to connect ideas and summarizes the lesson to make sure that important ideas are captured in student notes. Direct instruction reinforces their work, adding mathematical conventions for vocabulary and notation. Direct instruction also takes place to ensure that students are prepared to complete the Ready and Go portions of the homework. The Ready portion reviews concepts that students learned in a previous unit or course that will be used in upcoming tasks. The Go portion of the homework is spiral review of concepts. Teachers typically add problems similar to the ones in the Ready and Go to the Warm-Up for the day and offers direct instruction to review these concepts as needed.

Unlike traditional curricula, direct instruction does not supplant student thinking by taking away the opportunity to develop their own strategies, make connections among ideas, and solve problems independently. This helps students to become confident that they can be mathematical thinkers and that mathematics is a subject of reasoning, not simply a set of disconnected procedures and rules. As teachers monitor student engagement and progression they should intervene as needed using their professional judgment to provide students with direct instructional supports. For example, if students have reached the Practice Understanding Task and are struggling with fluency, the teacher may step in to clarify procedures and strategies that are most efficient.

The role of direct instruction using the MVP curriculum has been communicated to teachers. District staff will continue to work with GHHS and WCPSS math teachers on the effective use of direct instruction where appropriate.

**Why does there appear to be a discrepancy in the data reported from NCDPI and WCPSS related to Math 1 EOC scores in 17-18?**

Below are the data numbers used to calculate the difference in percent proficient for WCPSS high school students from the 2016-17 school year to the 2017-18 school year on the Math 1 EOC. GLP refers to Grade Level Proficiency (Levels 3, 4, and 5) and CCR refers to College and Career Ready (Levels 4 and 5). This data is generated internally (not by NCDPI). For each year, the data reports the percent proficient only for high school students who were administered the Math 1 EOC during that school year. This allows for us to do a year-to-year comparison.

	Percent proficient Math 1			Difference from 2016-17 to 2017-18
	2015-16	2016-17	2017-18	
GLP	35.9	40.5	42.0	1.5
CCR	23.2	26.4	28.3	1.9

Note that the data NCDPI reports on their website combines scores across several years of Math 1 EOC administrations in order to adhere to their federal reporting guidelines, which often combines results for middle and high school students. As such, it is nearly impossible to answer a specific question about high school performance from their publicly reported data.

**How much funding has been allocated for the implementation of MVP in WCPSS?**

The following information outlines the costs of MVP since implementation began in 2017-2018. Please be reminded that state allotments for textbooks had ceased 10 years prior, which created inequity across districts and schools within a district. In addition, there was minimal professional learning for math educators during that time. Hence, the budget for math textbooks or curriculum was zero dollars. The greatest portion of this multi-year budget has been spent on resources and supporting teachers.

Professional Development June 2017-June 2019	\$567,450.00	Training sessions began prior to the start of the 2017-2018 school year.
MVP Resources (Licenses, Homework Videos)	\$655,540.00	Thru June 30, 2022
Substitute Teachers (2018-2019 only)	\$107,200.00	Several training days were held during the summer, requiring no substitute teachers.
Printing (2018-2019 only)	\$110,163.00	Printing costs for 2017-2018 are not readily available at this time as they were bundled with another large printing project.
<b>*Total Cost of Implementation</b>	<b>\$1,440,353.00</b>	<b>*Based on readily available data as of 3/28/19.</b>

**Is the district hearing widespread concerns about students struggling/failing as a direct result of MVP implementation?**

It should be noted the curriculum is only one factor among many in creating a successful classroom experience for students. Teachers and schools build and develop their own unique classroom climates and - within content/level PLTs - implement specific instructional, assessment, and grading practices when using any curriculum, MVP or otherwise. Schools regularly monitor and observe classroom practices and student outcomes in order to ensure that students are performing at a consistent mathematical level.

Over the past couple of months, the WCPSS Curriculum Development Office has recorded contacts from the following schools and number of families (as of 3/28/19):

- Green Hope High School (13 families)
- Apex Friendship High School (3 families)
- Heritage High School (3 families)
- Athens Drive High School (1 family)
- Cary High School (1 family)
- Martin Middle School (2 families)

**How is the district supporting teachers with the implementation of MVP?**

Teachers had the opportunity to receive four days of comprehensive professional learning focused on the implementation of MVP in Math 1, 2 and 3 during the 2017-2018 and 2018-2019 school years. During the trainings, the facilitators modeled instruction as teachers delved into the materials to prepare for upcoming units. District leaders meet regularly with Math 1, 2, and 3 PLT Team Leaders to gather feedback and offer additional support. Feedback has been used to periodically revise the materials for better flow and to remove any typos and/or errors.

Targeted support is being provided to schools and/or PLTs as needed. At Green Hope High School, the Senior Administrator for High School Math has provided PLT planning support to the Math 2 teachers and is offering ongoing support via classroom visits with feedback and meeting regularly with the Math 2 PLT. Support is currently being provided to the substitute teacher through a centrally-based Coordinating Teacher.